IN THE CLAIMS:

The status of the claims is as follows. This listing of claims replaces all prior versions and listings of claims in the application.

1-39.   (Cancelled).

40.   (Currently Amended) A rate engine for use in a utility distribution system, comprising:

an input module operative to accept utility data, rate data and time data, the time data including a time interval composed of at least one logging interval;

a processing module coupled with the input module and operative to compute at least one cost based on the utility data and rate data, the at least one cost being associated with the time at least one logging interval; and

an output module coupled with the processing module and operative to provide an output including the at least one cost,

wherein the output comprises one or more time intervals with the at least cost associated with each time interval.

41.   (Original) The rate engine of claim 40, wherein the rate data comprises a plurality of charges.

42.   (Currently Amended) The rate engine of claim 41, wherein the time at least one logging interval comprises a plurality of logging intervals, and the at least one cost comprises a plurality of costs, wherein each of the plurality of costs is associated with one of the plurality of logging intervals, and the plurality of costs is outputted by the output module.

43.   (Original) The rate engine of claim 42, further comprising a communication interface coupled with said input module and operative to receive said utility data from at least one measuring device via a network.

44.   (Currently Amended) The rate engine of claim 43, wherein the utility data comprises at least one of water data, gas data, air data, steam data, emissions data, bandwidth data, and Million Instructions Per Second (MIPS) data.

45.   (Original) The rate engine of claim 43, wherein the utility data comprises electrical data.

46.   (Original) The rate engine of claim 43, wherein the utility data comprises hypothetical data.

47.   (Original) The rate engine of claim 46, wherein the hypothetical data represents at least one of data in the past, data in the future, data that has been scaled, data that has been shifted, data that has been estimated, and data that has been edited.

48.   (Original) The rate engine of claim 42, wherein the plurality of logging intervals span a time period associated with bill to date.

49.   (Original) The rate engine of claim 48, wherein the utility data comprises electrical data.

50.   (Original) The rate engine of claim 42, wherein the plurality of logging intervals span a time period associated with more than one billing period.

51.   (Original) The rate engine of claim 50, wherein the utility data comprises electrical data.

52.   (Original) The rate engine of claim 42, wherein the plurality of logging intervals span a time period associated with more than one tariff.

53.   (Original) The rate engine of claim 42, wherein the plurality of logging intervals span a time period associated with one billing period, and further wherein the utility data comprises both electrical data and hypothetical data.

54.   (Original) The rate engine of claim 42, wherein the rate data comprises at least one of one tariff, a plurality of tariffs and real time pricing.

55.   (Original) The rate engine of claim 42, further wherein

the input module accepts meta data and

the output module outputs the meta data with the plurality of costs.

56.   (Currently Amended) The rate engine of claim 55, wherein the meta data further comprises at least one of a cost center identifier and a billing period identifier.

57.   (Currently Amended) The rate engine of claim 42, wherein the processing module performs a Flat Distribution calculation in which a charge for the time interval is distributed evenly across the plurality of logging intervals.

58.   (Original) The rate engine of claim 42, further wherein the processing module

determines a spanning interval, the spanning interval having a plurality of spanning logging intervals; and

distributes each of the plurality of charges evenly across the plurality of spanning logging intervals.

59.   (Currently Amended) The rate engine of claim 42, wherein the processing module computes a Weighted Distribution calculation in which one or more charges are distributed based on weighting of another charge.

60.   (Original) The rate engine of claim 42, wherein at least one of the plurality of charges comprises a penalty charge, and at least one of the plurality of charges comprises a usage charge and further wherein the processing module

determines a spanning interval, the spanning interval having a plurality of spanning logging intervals;

calculates a percentage of the usage charge for each spanning logging interval; and

distributes the penalty charge weighted according to the percentage of the usage charge.

61.   (Original) The rate engine of claim 60, wherein the utility data comprises electrical data.

62.   (Currently Amended) The rate engine of claim 42, wherein the processing module computes a Zeroing Distribution calculation, wherein the at least one cost is determined by iteratively computing a marginal cost for each of the plurality of logging intervals.

63.   (Original) The rate engine of claim 42, wherein original utility data is associated with each of said plurality of logging intervals, and further wherein the processing module determines a spanning interval, the spanning interval having a plurality of spanning logging intervals;

calculates a total cost associated with the spanning interval;

sets utility data associated with one of said plurality of logging intervals to a value such that the cost of the utility data comprises zero for the one of said plurality of logging intervals;

combines the utility data and rate date to create a temporary cost associated with the spanning interval;

subtracts the temporary cost from the total cost to create one of said plurality of costs;

associates the one of said plurality of costs with the one of said plurality of logging intervals;

resets the utility data associated with the one of said plurality of logging intervals to the original utility data; and

repeats the setting, combining, subtracting and resetting for the remainder of each of said plurality of logging intervals.

64.   (Original) The rate engine of claim 63, wherein the utility data comprises electrical data.

65.   (Currently Amended) The rate engine of claim 63, further wherein the processing
module scales said plurality of costs so that the sum of said plurality of costs is
~~substantially~~ equal to said total cost.

66.   (Currently Amended) The rate engine of claim 40 4̶2̶, wherein the processing module
computes a Slicing Distribution calculation, wherein the at least one cost is determined
by iteratively computing a marginal cost for each of a plurality of logging intervals.

67.   (Original) The rate engine of claim 42, wherein an original resource usage value is
associated with each of said plurality of logging intervals, and further wherein the
processing module
determines a spanning interval, the spanning interval having a plurality of spanning
logging intervals, the plurality of spanning logging intervals each having an original
resource usage value;
orders the plurality of spanning logging intervals from greatest to least according to the
original resource usage value;
creates an assignment set of all intervals;
creates a lowest value equal to the lowest resource usage value among all spanning
logging intervals;
creates hypothetical data by setting a resource usage value for each interval to be equal to
the lowest value;
creates a running total cost and sets the running total cost to zero;
combines the hypothetical data and the rate data to create a temporary cost associated
with the spanning interval;
subtracts the running total cost from the temporary cost to create a slice cost;
distributes the slice cost evenly among each interval in the assignment set;
adds the slice cost to the running total cost;
resets the assignment set by excluding all intervals where the associated resource usage is
equal to or less than the lowest value;

resets the lowest value to be equal to the lowest resource usage value among all intervals within the assignment set;

resets the hypothetical data by setting the resource usage value for all intervals within the assignment set to be equal to the lowest value, and leaving all intervals not in assignment set at that interval's original resource usage value; and

repeats the combining, subtracting, distributing, adding, resetting of the assignment set, resetting of the lowest value and resetting of the hypothetical data until there are no intervals remaining in the assignment set.

68. (Original) The rate engine of claim 67, wherein the utility data comprises electrical data.

69. (Original) The rate engine of claim 67, wherein the rate data includes a price tier, the price tier having a price tier value and wherein when the processing module creates the hypothetical data, the processing module sets said lowest value to be equal to the lesser of the lowest resource usage value among all spanning logging intervals, and the price tier value; and further when the processing module resets the hypothetical data, the processing module determines whether the lowest value has exceeded the price tier value, and if so resets the lowest value to be equal to the lowest resource usage value among all intervals within the assignment set, otherwise resets the lowest value to be equal to the lesser of the lowest resource usage value among all intervals within the assignment set and the price tier value.

70. (Currently Amended) The rate engine of claim 40 42, wherein the processing module performs a Slicing Distribution with Price Tiers calculation, wherein the at least one cost is determined by iteratively computing a common cost and evenly distributing the common cost across a plurality of logging intervals, wherein the common cost is computed for one of a common resource usage shared by the plurality of logging intervals and resource usage at price tier boundaries.

71.   (Currently Amended) The rate engine of claim ~~40~~ 42, wherein the processing module

computes a Tiered Distribution calculation, wherein the at least one cost is determined by

iteratively computing a common cost for a resource usage shared by a plurality of logging

intervals at price tier boundaries and distributing the common cost across the plurality of

logging intervals according to resource usage.

72.   (Original) The rate engine of claim 42, wherein the rate data includes a price tier, the

price tier having a price tier value and further wherein an original resource usage value is

associated with each of said plurality of logging intervals, and further wherein the

processing module

determines a spanning interval, the spanning interval having a plurality of spanning

logging intervals;

creates an assignment set of all intervals;

creates hypothetical data by setting the resource usage value for each interval to be equal

to the lesser of the interval's original resource usage value and the price tier value;

creates a total tier usage by adding together all hypothetical values;

combines the hypothetical data and the rate data to create a temporary cost;

distributes a portion of the temporary cost to each interval in the assignment set by

dividing the hypothetical data for that interval by the total tier usage and multiplying by

the temporary cost;

resets the assignment set by excluding all intervals where the usage data was equal to or

less than the price tier value;

resets the hypothetical data by setting the resource usage value for each interval to be

equal to the interval's original resource usage value;

resets the total tier usage by adding together all hypothetical values and subtracting the

previous total tier usage; and

repeats the combining the hypothetical data and distributing the temporary cost.

73.   (Original) The rate engine of claim 42, wherein at least one of the plurality of charges is not billed on a logging interval basis.

74.   (Original) The rate engine of claim 42, wherein the utility data comprises data for at least one resource, further wherein the processing module:
varies the value of the at least one resource to create a plurality of hypothetical values;
combines each of the plurality of hypothetical values with the rate data to create a plurality of hypothetical costs, wherein each of the plurality of hypothetical costs is associated with one of the plurality of hypothetical values; and
outputs the plurality of hypothetical costs.

75.   (Original) The rate engine of claim 74, further wherein the processing module varies the value of the at least one resource by percentage increments.

76.   (Original) The rate engine of claim 74, further wherein the processing module varies the value of the at least one resource by unit increments.

77.   (Original) The rate engine of claim 74, wherein the at least one logging interval comprises a plurality of logging intervals, further wherein the processing module repeats for each logging interval the creating the hypothetical values, the combining the plurality of hypothetical values with the rate data to create a plurality of hypothetical costs and outputting the plurality of hypothetical costs.

78.   (Original) The rate engine of claim 77, wherein the utility data comprises a plurality of resource data, further wherein the processing module repeats for each of the plurality of resource data, repeating for each logging interval the creating the hypothetical values, the combining the plurality of hypothetical values with the rate data to create a plurality of hypothetical costs and outputting the plurality of hypothetical costs.

79.   (Original) The rate engine of claim 78, further wherein the processing module identifies logging intervals where the hypothetical costs are sensitive to variations in the hypothetical values of the resource data.

80.   (Cancelled).

81.   (Currently Amended) A system for calculating the per logging interval cost of a utility, comprising:
means for accepting utility data, rate data and time data from a data source, the rate data comprising a plurality of charges, the time data comprising a plurality of logging intervals;
means for computing a plurality of costs based on the utility data and rate, each of the plurality of costs being associated with one of the plurality of logging intervals; and
means for outputting the plurality of costs,
wherein the means for accepting accepts meta data and the means for outputting outputs the meta data with the plurality of costs.

82.   (Currently Amended) A system for calculating the per logging interval cost of a utility, the system comprising:
a rate engine, the rate engine having:
an input module operative to accept utility data, rate data and time data, the rate data comprising a plurality of charges, the time data comprising at least one time interval composed of a plurality of logging intervals;
a processing module coupled with the input module and operative to compute a plurality of costs based on the utility data and rate, each of the plurality of costs being associated with one of the plurality of logging time intervals; and
an output module coupled with the processing module and operative to provide an output including the plurality of costs,
wherein the output comprises one or more time intervals with the plurality of costs associated with each time interval.

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83.   (Original) The system of claim 82, wherein the rate engine further comprises a communication interface coupled with said input module and operative to transmit said utility data to said input module.

84.   (Original) The system of claim 83, further comprising a network coupled with said communication interface, and operative to transmit said utility data to said communication interface.

85.   (Original) The system of claim 84, further comprising a measuring device coupled with said network and operative to generate and transmit said utility data to said network.

86.   (New) The rate engine of claim 46, wherein the hypothetical data comprises at least one of past data, future data, scaled data, shifted data, estimated data, edited data, modeled data, and normalized data.